Please note:

Further details are provided in the Final Report on Site Selection Process (doc ref: 7.05) that can be found on the Thames Tideway Tunnel section of the Planning Inspectorate’s web site.
Site suitability report
S04EG

Industrial Units, Allied Way
Thames Tunnel
Site suitability report S04EG

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List of abbreviations

- AOD: above Ordnance Datum
- BAP: biodiversity action plan
- BT: British Telecom
- CPO: compulsory purchase order
- CSO: combined sewer overflow
- DLR: Docklands Light Railway
- EA: Environment Agency
- GLA: Greater London Authority
- HGV: heavy goods vehicle
- LNR: local nature reserve
- LPA: local planning authority
- LU: London Underground
- m: metre/metres
- MOL: Metropolitan Open Land
- ONS: Office of National Statistics
- ORN: Olympic Route Network
- PLA: Port of London Authority
- POS: public open space
- PTAL: public transport accessibility level
- SAM: scheduled ancient monument
- SINC: site of importance for nature conservation
- SNCI: site(s) of nature conservation importance
- SSR: site suitability report
- SSSI: site(s) of special scientific interest
- SUDS: sustainable urban drainage systems
- TfL: Transport for London
- TD: tunnel datum
TLRN  Transport for London Road Network
TPA   Thames Policy Area
UDP   unitary development plan
UXO   unexploded ordnance
1 Introduction

1.1 Purpose and structure of the report

1.1.1 The Site selection methodology paper (May 2009 and revised August 2011) outlines the process to be used to create the preferred list of main tunnel sites, and this process also applies to CSO sites. Paragraph 2.3.31 lists the type of general considerations that will be addressed in each site suitability report. Whether a consideration is relevant to the assessment of a site will depend on available information and professional judgement.

1.1.2 This report was prepared through the assessment of information from the perspective of a number of technical disciplines: engineering, planning, environment, property and community. The reports have been prepared on the basis of the information listed in Appendix 1 and this level of information is considered to be appropriate to this stage of assessment.

1.1.3 The Site selection background technical paper provides information on the requirements for different types of sites, their sizes and typical activities/facilities within the sites.

1.1.4 Each site suitability report considers a particular site on its own merits. In addition, an Engineering options report was produced, which relates to main tunnel and connection tunnel options. Information from both of these reports will feed into the technical assessment of how well the site may fit in with tunnel design options, ensuring combinations of sites spread across the length of the tunnel route provide a reasonable spatial distribution of sites (that will best assist with the construction of the tunnel, operation and maintenance). The outcomes are reported in the Phase two scheme development report.

1.2 Background

1.2.1 The process for selecting sites is set out in the Site selection methodology paper. All sites have previously passed through the following parts of Stage 1:

- Part 1A – Creation of the long list of potential main tunnel (and CSO) sites
- Part 1B – Creation of a short list of potential main tunnel (and CSO) sites
  - Table 2.2: Long list of main tunnel (and CSO) sites – an assessment against set considerations and values
  - Table 2.3: Draft short list of main tunnel (and CSO) sites – assessment against a list of more detailed considerations
  - Workshops to consider each site to arrive at a short list of sites.

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*a The amendments made in August 2011 do not change the site selection methodology process. The amendments only related to the introduction of a second phase of consultation (paragraphs 2.3.13-2.4.15) and minor factual updates.*
1.2.2 The final part of Stage 1 includes this report. The following is an overall summary of all elements that apply to all the sites on the final short list:

- Part 1C – Creation of the preferred list of main tunnel (and CSO) sites – site data, site visits, site suitability reports, engineering options report and optioneering workshops that are reported in the *Phase two scheme development report*.

1.2.3 The *Site selection methodology paper* also contains a provision for a back-check process in paragraph 2.5.6 that states:

“If any sites for any of the main tunnel sites or intermediate sites (or CSO site) are eliminated for any reason, if there are significant changes of circumstances in relation to existing sites or combinations of sites, if new or replacement sites are required or found or if the engineering design develops in unexpected ways then a targeted repeat of stages 1-3 will need to be undertaken in order to fill in any site gaps.”

1.3 Consultation

1.3.1 Thames Water’s approach to engagement and consultation for the Thames Tunnel project is outlined in the *Statement of Community Consultation* and the accompanying *Community Consultation Strategy*. Thames Water has engaged regularly with all potentially affected London local authorities, other stakeholders and interested parties on sites and the project.

1.3.2 Phase one consultation has been completed for all the preferred and shortlisted sites along with the three main tunnel route options. The analysis of the consultation responses is set out in the *Report on phase one consultation* and *Interim engagement report*. Any relevant site comments were considered at the post phase one consultation optioneering workshops. The outcomes of these workshops are reported in the *Phase two scheme development report*. After the workshops, engagement on sites has continued with key stakeholders, and the engineering design for sites has also continued in parallel. In autumn 2011, phase two consultation will provide another opportunity for people to comment on sites.

2 Site information

2.1 Site and surroundings

2.1.1 This site is one of the shortlisted main tunnel sites. This section provides an overview of all the site information that will be used by one or more disciplines to assess the site in sections 3 to 9 of this report.

2.1.2 The proposed site is located along Warple Way within the London Borough of Ealing. The site is currently occupied by industrial units, a retail outlet with associated car parking, and an educational music facility. A site location plan is attached as Appendix 2.

2.1.3 The site is in close proximity to the boundary of the London Borough of Hammersmith and Fulham which runs along Warple Way.
2.1.4 The surrounding area is residential in character and the site is bounded on three sides by residential properties on Curricle Street, Essex Park Mews, The Vale, Larden Road and Valetta Road. Industrial units are located to the west of the site, along Warple Way.

2.1.5 The site is located within a major employment location (London Borough of Ealing, UPD Policy 6.1), and all the mapped designations are shown on the planning and environment plans in Appendix 3.

2.1.6 Photographs of the site and surroundings, together with an aerial photograph of the site, are attached as Appendix 4.

2.1.7 A number of preliminary transport plans for the site are attached as Appendix 5.

2.1.8 Third-party assets and significant utilities are listed below and are shown on the services and geology plan in Appendix 6:

**Industrial units, Allied Way (main tunnel reception site)**

- Majority of the site consists of a two-storey warehouse and commercial structure with a car park at the bottom end of the site.

**Acton Storm Tanks (CSO)**

- Thames Water operational site occupied by six uncovered storm tanks, a pumping station and associated infrastructure
- 1.8m diameter Acton Storm Relief Sewer (CSO connection is to this sewer)
- A number of additional sewers are located within the Storm Tanks site.

2.1.9 The locations of other third-party assets, such as BT and fibre optic communication cables, are to be confirmed by further studies and utility searches and may not be shown on the services and geology plan.

2.1.10 Information on the geology specific to this site is unavailable. It is considered that geological conditions on this site will be similar to those found at the Acton Storm Tanks, which lie to the southwest. Information on the geology specific to the Acton Storm Tanks can be found within the services and geology plan, which is in Appendix 6. This plan shows that both shafts would be founded in London Clay.

2.2 **Type of site**

2.2.1 The site S04EG is being considered as a main tunnel reception site with a CSO interception of the Acton Storm Relief Sewer (CS01X).

2.2.2 The location of the Acton Storm Relief Sewer is remote from site S04EG. The development of site S04EG as a main tunnel reception site would require a separate CSO site (C01YC) located on the Acton Storm Tanks site, and a tunnelled connection culvert between C01YC and S04EG.
3 Proposed use of site – construction phase

3.1.1 The proposed construction phase layout for the main tunnel site is located in Appendix 7 – Construction phase layout, and is based on a preliminary assessment.

3.1.2 The construction phase layout drawing is illustrative and shows:

- a main tunnel reception site on S04EG, CSO interception of the Acton Storm Relief Sewer (CS01X) on site C01YC, and tunnelled connection culvert linking C01YC to S04EG
- potential access points.

3.1.3 This drawing provides an initial preliminary schematic layout that has not been optimised. If the site proceeds to the next stage as a preferred site, construction phase layouts would be optimised to minimise impacts.

3.1.4 Drawings identifying typical construction activities associated with the shaft construction phase are provided in Appendix 7. Potential above-ground construction features (dependent on shaft type) include:

- approximately 3m high hoarding around the site boundary
- welfare facilities, temporary structures, approximately 3m high.
- grout plant, approximately 3m to 5m high, including silos
- mobile crane, approximately 30m high (maximum and not for full construction duration)
- gantry crane, approximately 8m high.

3.1.5 Preliminary data associated with the construction phase are provided in Table 3.1.

### Table 3.1 Construction phase data

<table>
<thead>
<tr>
<th>Activity</th>
<th>Main tunnel reception site with CSO interception</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of construction period</td>
<td>4 to 5 years</td>
</tr>
<tr>
<td>Likely working hours, ie, (night/day/weekend)</td>
<td>12 hrs from 7am to 7pm</td>
</tr>
<tr>
<td>Working days</td>
<td>Mon to Sat</td>
</tr>
<tr>
<td>Primary means of transporting excavated material away from site</td>
<td>Road</td>
</tr>
<tr>
<td>Primary means of transporting materials to site</td>
<td>Road</td>
</tr>
</tbody>
</table>
4 Proposed use of site – operational phase

4.1 Introduction

4.1.1 The indicative operational phase layout for the main tunnel site is located in Appendix 8 – *Operational phase layout*, and is based on a preliminary assessment. Operational phase layouts for the interception works on site C01YC are not illustrated.

4.1.2 The generic elevations of structures shown on the operational phase layout are located in Appendix 8 and provide an illustration of typical examples of the permanent structures which are applicable to main tunnel sites.

4.1.3 The underground infrastructure at this site would likely comprise a shaft, double flap valve chamber, penstock chamber and associated culverts. The interception chamber would be located on site C01YC. It is anticipated that a tunnelled connection culvert would be required between the CSO interception at C01YC and the main tunnel shaft at S04EG.

4.1.4 The above-ground infrastructure at this site would likely comprise a ventilation column and a ventilation building.

4.1.5 The top structures to the shaft and flap valve chamber would be finished at a level of approximately 106mATD (6mAOD), approximately equal to the existing ground level. The top structure is to provide access and egress into the shaft. For further information on the generic layout of this top structure, refer to Appendix 8.

4.1.6 Top structures would be surrounded by hardstanding. The area would be fenced.

4.1.7 Preliminary data associated with the operational phase are provided in Table 4.1.

<table>
<thead>
<tr>
<th>Table 4.1 Operational phase data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of inspections and maintenance and likely working hours, ie, (night/day/weekend) – frequency of visits</strong></td>
</tr>
<tr>
<td>One daytime visit every six months for electrical/instrument inspection. An additional one-week maintenance period for tunnel/shaft inspection required per ten years that could be night/day/weekend working.</td>
</tr>
<tr>
<td><strong>No. of traffic movements</strong></td>
</tr>
<tr>
<td>One van visit every six months. An additional one-week period of two to ten movements per day (estimated several vans and two cranes) every ten years.</td>
</tr>
</tbody>
</table>

4.2 Restoration and after-use

4.2.1 The portion of the site not occupied by the permanent works would be restored to its original condition on completion of the construction works.
If any buildings were demolished, these would not be reinstated unless required.

5 Engineering assessment

5.1 Access

5.1.1 This section should be read in conjunction with Section 7.2.

Road

5.1.2 Existing road access to the site from the west is via Warple Way. Warple Way is a 7.5m-wide, one-way road which comes off the A4020, approximately 50m away from the site access. Alternative access from the east from the A4020 is currently available via Larden Road and on to Allied Way. Both Warple Way and Larden Road are of restricted width and have high levels of on-street parking on both sides. Warple Way is fronted primarily by business and light industrial premises. Larden Road is residential.

5.1.3 A section of Warple Way and Stanley Gardens are currently one-way roads, with Warple Way allowing vehicles in a southbound direction (as far as the junction with Canham Road), and Stanley Gardens allowing traffic flow in a northbound direction only.

5.1.4 Construction site access would be located on Warple Way at private access known as Allied Way. Warple Way is one-way southbound and therefore the northern end of Warple Way would require conversion to two-way, and the traffic signal junction with The Vale amended to allow two-way flow on Warple Way.

5.1.5 The access route from/to the TLRN (A40) would use Old Oak Road and The Vale (A4020). The access route would then use Warple Way to access the site via Allied Way. Warple Way between The Vale and the site is one-way southbound, is approximately 7.5 metres wide and features parking on both sides, reducing the effective width to 3.5m. To enable two-way access by HGVs, all on-street parking between The Vale and the site access on Warple Way will require removal.

5.1.6 Acton Storm Tanks would be used for the storage of some materials. Warple Way between Cobbald Road and Canham Gardens would therefore need to be converted to two-way traffic.

5.1.7 For the operational phase, only one access point would be used from Allied Way.

5.1.8 The use of site S04EG for a main tunnel reception site would still require the use of site C01YC for CSO interception works. It is anticipated that site S04EG would act as the main tunnel site, with C01YC being a smaller CSO site.

5.1.9 Road access for the CSO site at C01YC would be via new vehicular access points off Warple Way, in close proximity to the junction with Cobbald Road. Vehicles accessing site C01YC would travel southbound along Warple Way before turning into C01YC. Vehicles exiting the C01YC
site would travel northbound along Warple Way prior to utilising the existing one-way system in Canham Road and Stanley Gardens to transfer to either site S04EG or the A4020.

5.1.10 Further detail about the site access requirements for the CSO interception works is contained within Site suitability report C01YC, Acton Storm Tanks.

**Rail**

5.1.11 There would be no rail network local to this site. Acton Central railway and tube station would be approximately 1km away from the site.

**River**

5.1.12 The site would be more than 1.5km from the river, so there would be no river access and jetty/wharfage facilities.

### 5.2 Construction works considerations

5.2.1 The site is occupied by a number of approximately two-storey light industrial structures of varying construction type and age. Site clearance works would require demolition of all structures within the construction boundary.

5.2.2 The CSO interception chamber and connection culvert would both be situated outside the site, on site C01YC, and would require a tunnelled connection culvert to connect C01YC to S034G. This may have construction programming implications on either S04EG or C01YC.

5.2.3 This split site arrangement would have the main construction activities occurring at S04EG, and C01YC acting as a satellite CSO site. The splitting of the construction activities would potentially require doubling the handling of some materials and reduce the construction efficiency. Although the splitting of construction activities is not ideal, it is considered that this would be manageable.

5.2.4 It is anticipated that a tunnelled connection culvert would be required to convey CSO flows from the interception location at site C01YC to the shaft location at S04EG. The route of this tunnelled connection may be required to pass beneath either the existing storm tanks or the pumping station located within site C01YC.

5.2.5 The route of the connection would be required to pass beneath third-party buildings, including the multi-storey Factory Quarter residential development. To ensure suitable clearance to the foundations for the development, it may be necessary to construct a deeper connection culvert between sites C01YC and S04EG. Although not evaluated fully, this may increase the depth requirements of the main tunnel.

5.2.6 Further detail about the site requirements for the CSO interception works is contained within Site suitability report C01YC, Acton Storm Tanks.

5.2.7 It is likely that the proposed works can be constructed within the overall construction programme.
5.3 Permanent works considerations

5.3.1 The top structures in S04EG and C01YC would be flush with existing ground levels.

5.3.2 Further detail about the permanent works considerations for the CSO interception works is contained within Site suitability report C01YC, Acton Storm Tanks.

5.4 Health and safety

5.4.1 Consideration would have to be given to enable the safe demolition of the structures which currently occupy the site.

5.4.2 Care would be required when working near the open storm tanks when conducting the interception works at site C01YC.

5.4.3 There are no unusual health and safety issues with this site.

6 Planning assessment

6.1 Introduction

6.1.1 The planning assessment builds on the advantages and disadvantages reported in Table 2.3 and covers the following areas:

- Planning applications and permissions
- Planning context
- Planning comments.

6.2 Planning applications and permissions

6.2.1 An initial desktop search of the London Borough of Ealing online planning applications database identified no significant planning applications which are not consistent with the existing use submitted within the last five years. However, of note is an application granted consent in 2004 (ref 2004/4032) for the change of use from B1 to mixed B1 and D1 (educational centre) use for 29 Warple Way, and a Certificate of Lawfulness (ref 2010/0978) for the use of 41 Warple Way for the teaching of music, also Use Class D1 (ref 2011/0105).

6.3 Planning context

6.3.1 The following is a summary of the relevant local planning policies and designations affecting the site, taken from the current statutory development plans for the London Borough of Ealing, as well as the neighbouring London Borough of Hammersmith and Fulham. The local plans comprise the policies from the Ealing Unitary Development Plan, adopted in October 2004, and the Hammersmith and Fulham Unitary Development Plan, adopted in 2003.

6.3.2 The London Borough of Ealing submitted its Development (or Core) Strategy to the Secretary of State on 21 July 2011. Following review of
the submitted documents, we consider the relevant policies to be of material weight.

6.3.3 The London Borough of Hammersmith and Fulham Core Strategy is subject to a binding Inspector’s report and anticipated for formal adoption by the council in October 2011. Following review of the submitted documents, we consider the relevant policies to be of material weight.

**London Borough of Ealing**

6.3.4 The site is located within major employment location. **Policy 6.1, Supply of Land and Property for Business Use**, and UDP Policy 6.4, **Industry and Warehousing in Major Employment Locations**, supports industry as the preferred use. **Policy 6.5, Ancillary Development in Major Employment Locations**, seeks to maximise or retain employment potential and enhance the attractiveness of major employment locations. The council will seek to retain an appropriate land supply for industrial and warehousing units in these locations. Relocation of existing businesses to appropriate alternative premises may be required.

6.3.5 The site is adjacent to a wider strategic residential area designation. UDP **Policy 1.1** encourages housing and other uses serving local residents in these residential areas. Planning should also have regard to other such uses essential for sustainable residential communities, such as open space, retail and employment-giving uses. Ealing’s emerging **Development (or Core) Strategy** identifies the site within the wider Uxbridge Road/Crossrail Corridor. **Policy 2.1, Realising the potential of the Uxbridge Road/Crossrail Corridor**, supports the sensitive development management of this area.

6.3.6 The site is bounded on three sides by residential properties on Curricle Street, Essex Park Mews, The Vale, Larden Road and Valetta Road. UDP policies 4.11 and 4.12 seek to protect the amenity of residential areas from the effects of noise, vibration and light pollution. Within the emerging **Development (or Core) Strategy Policy 1.1**, environmental impacts of activities within the borough should be reduced, with air quality and ambient noise levels protected and improved to create a clean and healthy environment for all.

6.3.7 Ealing’s Acton Park Conservation Area is located approximately 60m to the northwest of the site, and the Bedford Park Conservation Area approximately 375m to the south of the site. According to UDP **Policy 4.8, Conservation Areas**, the council will preserve or enhance the character and appearance of conservation areas and their settings.

**London Borough of Hammersmith and Fulham**

6.3.8 In the **Hammersmith and Fulham Unitary Development Plan, Policy EN21, Environmental Nuisance**, seeks to ensure that no undue detriment occurs to general amenities.

6.3.9 Hammersmith and Fulham’s Ravenscourt and Starch Green Conservation Area is situated approximately 285m to the southeast of the site. Hammersmith and Fulham’s UDP **Policy EN2B, Effect of Development on**
the Setting of Conservation Areas and Views into and out of them, only permits development, including development outside conservation areas, which will preserve or enhance the character or appearance of the conservation area. The emerging Hammersmith and Fulham Core Strategy also supports the need to protect the quality and character of the borough’s conservation areas within Policy BE1, Built Environment.

6.4 Planning comments

6.4.1 There are few planning designations that are applicable both on and adjacent to the site. These designations have been identified and described in Section 6.3, and those relating to employment uses and residential amenity are of most relevance to the proposed development.

6.4.2 The site is located within a major employment location, and associated policies support industry and warehouse uses and seek to maximise or retain employment potential. The council may require the temporary relocation of existing businesses to appropriate alternative premises within the local designated area in accordance with these policies. However, it is worth noting that a number of non-employment uses have recently been granted for change of use consent within the major employment location. This may indicate that other uses, such as the construction works associated with a main tunnel reception site, may also be acceptable in this location, particularly given that this use would be temporary and the area of works could be returned back to employment land once completed. The use of the site for the project and the potential conflict with employment policies would require further investigation and discussions with the local authority.

6.4.3 The site is located in close proximity to residential properties and protecting the amenity of the local residents is a significant consideration. The nearest residents are located along Curicle Street, Essex Park Mews, The Vale, Larden Road and Valetta Road. Due to the close proximity of these residential properties, it is considered that mitigation to protect residential amenity from noise, dust and traffic movements may be challenging. However, measures such as controlled construction working hours suitable to residential areas, localised noise attenuation, an appropriate lighting strategy and a traffic management plan would reduce potential impacts.

6.4.4 Also of consideration are other noise-sensitive uses, such as educational music facilities and the nearby prayer and meditation centre. Again, appropriate mitigation would be required to reduce potential construction impacts on these community facilities.

6.4.5 Ealing’s Acton Park Conservation Area is located 60m to the northwest of the site and Hammersmith and Fulham’s Ravenscourt and Starch Green Conservation Area is set at a considerable distance away from the site. Use of the site is not considered to have an unacceptable impact on the setting or appearance of this conservation area, given the existing context, potential for mitigation and distance from site.

6.4.6 A further assessment of heritage and environmental considerations is made in Section 7.
7 **Environmental appraisal**

7.1 **Introduction**

7.1.1 The following sections summarise specialist assessments which are provided in Appendix 9 – *Environmental appraisal tables*.

7.2 **Transport**

7.2.1 The site is considered suitable as a main tunnel reception site (see a number of preliminary transport plans for the site attached as Appendix 5).

7.2.2 Despite the access route being constrained, the site is only likely to generate a small amount of HGV movements. The use of rail may not be feasible due to the small quantities of excavated material produced by a reception site. Should the quantities be sufficient for rail transport, the potential for the construction of rail sidings at Barnes Bridge would require further investigation. In order to enable road access for construction vehicles, some on-street parking will need to be removed. There is limited potential for the workforce to access the site by public transport, although some onsite parking would potentially be available.

7.3 **Archaeology**

7.3.1 On the basis of the information currently available, the site is suitable as a main tunnel reception site as the archaeological risk is likely to be low to medium. No records of archaeological receptors within the site have been identified at this stage, and the site has been subjected to disturbance by modern development. Available geotechnical information suggests that deeply stratified deposits and waterlogged deposits are unlikely to be present. A further desk-based assessment would be required to confirm the above should this site be progressed.

7.4 **Built heritage and townscape**

7.4.1 This site is considered suitable as a main tunnel reception site as the impact on built heritage receptors is likely to be minimal, and the industrial nature of the site means that it is judged to be of relatively low sensitivity. There are two receptors of medium importance (Bedford Park and Ravenscourt and Starch Green conservation areas) that may potentially be indirectly impacted on. Mitigation in the form of a high-quality scheme design, landscape design and screening would reduce any adverse impacts arising from the scheme.

7.4.2 In terms of townscape impacts, the site is considered to be suitable as a main tunnel reception site. The existing character is industrial in nature. During construction, the presence and operation of machinery, materials stores and buildings on site would impact the character of the site and local views. However, careful design of permanent elements and introduction of appropriate landscape treatment would reduce potential impacts and could enhance the existing character and views.
7.5 Water resources – hydrogeology and surface water

7.5.1 In terms of hydrogeology, this site is considered suitable as a main tunnel reception site because the shaft is to be constructed in London Clay (unproductive strata). No impact on the Chalk aquifer is expected. The superficial deposits at the site are Langley Silt, which is classified as unproductive strata at the site. Therefore, no impact is expected at shallow depth.

7.5.2 In terms of surface water resources, this site is considered suitable as a main tunnel reception site because there is no direct pathway for pollution to the River Thames. However, standard mitigation would be required.

7.6 Ecology

7.6.1 This site is suitable as a main tunnel reception site and may require only basic ecological surveys if selected. Should notable or protected species be present, it is likely that some limited habitat mitigation or compensation would be required.

7.7 Flood risk

7.7.1 This site is suitable as a main tunnel reception site because although there may be constraints on SUDS due to space and suitability for infiltration, the site lies in Flood Zone 1 (greater than one in 1,000-year flood extent).

7.8 Air quality

7.8.1 The site is less suitable for use as a main tunnel reception site due to the potential for fugitive emissions of dust during construction to have a perceptible impact at residential properties in close proximity to the site. These impacts could be minimised with standard dust control measures. There is potential for HGV movements on the local road network to cause localised air quality impacts in areas of already poor air quality. This could, to some extent, be mitigated by minimising the movement of HGVs during peak hours.

7.9 Noise

7.9.1 This site is less suitable as a main tunnel reception site due to the close proximity of residential receptors to the site. The number of vehicles associated with the construction phase and their access into and out of the site (and close to residential areas) also has the potential to cause disturbance.

7.10 Land quality

7.10.1 The site is less suitable as a main tunnel reception site based on the high potential for contamination to have occurred from the onsite car works, garage, pressed steel works and industrial estate, and from offsite activities to have impacted shallow groundwater which may have migrated beneath the site. The identified sources of contamination may impact on site workers and adjacent human receptors through direct contact/vapour inhalation exposure pathways.
8 Socio-economic and community assessment

8.1 Introduction
8.1.1 The socio-economic and community assessment builds on the advantages and disadvantages reported in Table 2.3 and covers the following areas:
- Socio-economic profile
- Socio-economic and community issues and impacts.

8.2 Socio-economic profile
8.2.1 The site is in the Southfield ward of the London Borough of Ealing. Statistics from the Office of National Statistics (ONS) 2001 Census data show the following relevant indicators for the ward, in comparison to the rest of Ealing, London and England as a whole:
- The ward has a mixed population, with a lower percentage of white British people than the average for England.
- The ward has an unemployment rate just lower than the national average, and a high percentage of high-level qualifications.

8.3 Issues and impacts
8.3.1 Due to the proposed location of the works for a main tunnel reception site, it is likely that the greatest impact on the local community will be caused by the proximity of the works to a number of residential properties, and the need to demolish a commercial unit on site which currently houses a cash and carry business. The need to relocate this business may impact on the owner, employees, the local economy and the local community.

8.3.2 The residential properties located on Curricle Street, Essex Park Mews, The Vale and Larden Road appear most likely to be affected, with those immediately adjacent to the east and opposite to the north in very close proximity to the works. There are also further residential properties to the south on Valetta Road, but these appear likely to be shielded from the proposed works by a number of commercial buildings, which appear likely to remain. There are also a large number of further residential properties located to the north, south, and particularly the east of the site.

8.3.3 The site itself is an operational commercial estate and it appears likely that in addition to the loss of the building housing the cash and carry business, a number of other businesses may be affected due to their proximity to the works.

8.3.4 There are also further commercial properties in the vicinity of the site to the west. These are opposite the access to the site so increased HGV traffic in the area may cause some disruption.

8.3.5 A number of potentially sensitive receptors are located to the south of the site, including a music teaching facility and a prayer and meditation centre.

8.3.6 In addition to the works on the Allied Industrial Estate site, a separate worksite will also be required on the Acton Storm Tanks site to intercept the CSO, and a connection culvert will need to be created to link the
interception chamber to the main tunnel reception site. There are a large number of residential properties opposite and overlooking the eastern side of the Acton Storm Tanks site and further properties in close proximity to the south and west. These properties may be impacted by the CSO interception works.

8.3.7 Due to the location of the after-use structures, there may be some impact on the local community due to the proximity of the ventilation building to residential dwellings. Other than the cash and carry business, which will have to be relocated if the site is used, it does not appear likely that the commercial business would be affected by the operational use of the site.

9 Property assessment

9.1 Introduction

9.1.1 This report builds on the advantages and disadvantages in Table 2.3 and the assessment provides more up-to-date information.

9.2 Crown land and special land comments

9.2.1 We believe the land to be privately owned by an investor and let to a number of occupiers as office/business units, and therefore appear to be neither Crown nor special land. There should, therefore, be no procedural difficulty in acquiring the land, using compulsory purchase powers.

9.3 Land to be acquired

9.3.1 The site comprises an area of land known as Industrial Units at Allied Way.

9.4 Property valuation comments

9.4.1 The units at Allied Way are let to a variety of occupiers and will provide a significant investment income to the freeholder, which would ultimately be reflected in a capital value for acquisition cost. Leaseholders may hold a lease commanding a value, depending on the nature of terms.

9.4.2 The site adjoins residential properties to the north, south and east. There is a possibility of long-term development aspirations for residential purposes.

9.5 Disturbance compensation comments

9.5.1 As identified, the site contains a variety of business units and from this, we anticipate claims for business relocation and possible extinguishment. There is a risk that disturbance claims could be significant, although further investigation should be undertaken to fully understand the various business operations.

9.6 Discretionary purchase costs comments

9.6.1 The site adjoins residential properties to three sides and there is a risk of discretionary purchase costs.
9.7 Offsite statutory compensation comments

9.7.1 There should be limited potential for offsite statutory compensation under S.10 of the Compulsory Purchase Act 1965, as there is unlikely to be any physical interference with public or private rights.

9.7.2 There should also be limited potential for claims under the Land Compensation Act 1973 Part 1, as the completed works are unlikely to result in diminution in value.

9.8 Site acquisition cost assessment

9.8.1 The site acquisition costs are likely to be acceptable but at risk of being high, depending on lease terms and the nature of occupiers, and possibility of long-term residential development.

10 Site conclusions by discipline

10.1 Introduction

10.1.1 The conclusions presented in this section are drawn from each discipline’s assessment, and are designed to inform the workshop where a final conclusion is reached on whether the site can be taken forward as a potential preferred site, subject to its fit with possible drive strategies in the case of main tunnel sites.

10.2 Engineering

10.2.1 Site S04EG is considered less suitable as a main tunnel reception site due to the presence of a multi-storey, third-party development along the alignment of the tunnelled connection culvert. This would lead to an increase in depth of the CSO drop shaft and main tunnel reception shafts, the connection culvert and potentially the main tunnel.

10.2.2 The site would be of sufficient size and would have suitable access arrangements. Site enabling works would require the demolition of the existing structures which currently occupy the site. CSO interception would be outside the site and would require a secondary satellite CSO site at C01YC Acton Storm Tanks. It is anticipated that a tunnelled connection culvert would be required to convey flows from C01YC to S04EG.

10.3 Planning

10.3.1 This site is considered less suitable for use as a main tunnel reception site.

10.3.2 The site is within, or in proximity to, a number of planning and environmental designated areas and sensitive uses, such as residential properties and community facilities. Further investigation would be required to determine if the temporary loss of designated employment land and the relocation of a number of existing businesses would be acceptable. Appropriate mitigation to protect the amenity of residential dwellings and other sensitive community uses from construction impacts would be required, and it is recognised that this may be particularly
challenging on this site, given the proximity and number of sensitive receptors.

10.4 Environment

10.4.1 Overall, the site is considered to be suitable as a main tunnel reception site, although mitigation would be required.

10.4.2 Based on current information, the site is considered suitable from the perspective of transport, archaeology, built heritage, townscape, water resources (hydrogeology and surface water), flood risk and ecology.

10.4.3 The site is considered less suitable from the perspective of air quality, noise and land quality.

10.4.4 Overall, the site is considered suitable, subject to further investigation of whether air quality, noise and land quality impacts could be adequately mitigated. Likely mitigation considerations would include the following:

- Noise – standard noise barriers are unlikely to be entirely effective and other techniques may be required to reduce construction noise to acceptable levels.
- Air quality – measures to ensure dust is adequately mitigated for the closest receptors
- Land quality – any required remediation of contamination (at this high risk site) and/or measures to ensure no mobilisation of contaminants retained in situ.

10.5 Socio-economic and community

10.5.1 The site appears less suitable from a community impacts perspective for use as a main tunnel reception site. It appears likely that a business premises will be lost and one business will have to be relocated, and there are a large number of residential properties located in close proximity to the proposed works which appear likely to be directly affected. Further residential properties are also located in the vicinity of the associated CSO site works.

10.5.2 Suitable alternative business premises will need to be identified for the business to be displaced, and mitigation will be required to reduce the impact of construction activities on the surrounding commercial and residential properties.

10.6 Property

10.6.1 This site is less suitable.

10.6.2 The advantages of the site are as follows:

- Limited benefits from a property perspective.

10.6.3 The disadvantages of the site are as follows:

- A number of business operations would be displaced
- Site adjoins residential properties on three sides.
10.7 **Next steps in the site selection process**

10.7.1 It should be noted at this point that the above conclusions do not represent an overall recommendation on the suitability of a site. The disciplines discuss their site suitability report conclusions at optioneering workshops, along with main tunnel drive strategy options. Main tunnel sites need to link together to form possible drive options for construction of the main tunnel. Therefore, a preferred site can only be identified through a series of main tunnel drive option comparisons. The outcome of this two-step process (sites and then drive option comparisons) is set out in the *Phase two scheme development report*. 
Appendices
Appendix 1 – Sources of information

Engineering

- Traffic Management and Access Roads/Rail – URS Scott Wilson
- Services (Utilities) and Third Party Assets – Thames Tunnel and utility companies
- Geology – British Geological Society and Thames Tunnel
- Construction and Operational Layout Template – Thames Tunnel
- Site selection background technical paper – Thames Tunnel

Planning

- London Borough of Ealing online planning applications database
- Saved policies in the Ealing Unitary Development Plan, adopted in 2004
- Saved policies in the Hammersmith and Fulham Unitary Development Plan, adopted in 2003
- Ealing Development (or Core) Strategy, submission document, July 2011

Environment

Transport

- Map of Transport for London Road Network (TLRN) – www.tfl.gov.uk
- Bus Route Maps: North-east, north-west, south-west, south-east – www.tfl.gov.uk
- Crossrail Plans – www.crossrail.co.uk/crossrail-bill-documents
- PTAL scores – Obtained from Table 2.3 information
- Thames Path map – www.walklondon.org.uk
- Capital Ring – www.walklondon.org.uk
- Cycle Routes – www.sustrans.org.uk and Local Cycling Guides 1-14
- Design Manual for Roads and Bridge TD 42/95, Highways Agency

Archaeology

- Historic Environment data from Greater London Archaeology Advisory Service (GLAAS)
- National Monuments Record – for some additional information regarding registered historic parks and gardens
- London Archaeological Archive and Research Centre (LAARC)
- Local authority websites
- Bing maps

**Built heritage and townscape**
- Local authority lists of Locally Listed Buildings
- National Monuments Record – for some additional information regarding registered historic parks and gardens
- Unitary development plan and DPDs
- Local authority websites
- Bing maps

**Water resources – hydrogeology and surface water**
- Local authority details of unlicensed abstractors
- Environment Agency abstraction licence details
- Environment Agency groundwater levels and contour maps (2009-11)
- Environment Agency water quality (surface water and groundwater)
- Environment Agency Groundwater Source Protection Zones
- Envirocheck
- British Geological Survey (BGS) logs
- BGS 1:50,000 Geological Sheets – Solid and Drift Editions (England and Wales)
- BGS Geology of London – Special Memoir for 1:50,000 Geological sheets 256 (North London), 257 (Romford), 270 (South London) and 271 (Dartford) (England and Wales)
- Crossrail (2005) – Assessment of Water Impacts Technical Report: Appendix C – Baseline Data. Figure C.4: Extent of Saline Intrusion based on 177 mg/l *5mmol/l) Isochlor

**Ecology**
- Multi-Agency Geographic Information for the Countryside (MAGIC) – www.magic.gov.uk - statutory designated sites
- London Wildweb – wildweb.london.gov.uk - non-statutory site of importance for nature conservation
• National Biodiversity Network – http://searchnbn.net - distribution of protected species
• Google Maps – aerial views of habitat features
• BAP habitats – www.natureonthemap.org.uk
• Priority habitats and species on national and local scales – www.ukbap.org.uk

Flood risk
• Environment Agency Flood Map – www.environment-agency.gov.uk
• Environment Agency National Flood and Coastal Defence Database
• Envirocheck

Air quality
• Local authority websites
• London Air Quality Network – www.londonair.org.uk
• Defra UK-AIR, air quality information resource – www.airquality.co.uk
• Defra Air Quality Management Areas – http://aqma.defra.gov.uk
• Defra Local Air Quality Management – http://laqm.defra.gov.uk

Noise
• Envirocheck – Identification of receptors
• Promap – Calculation of distances between site and receptors
• Multimap – Aerial photography – www.multimap.co.uk
• Defra noise maps – Identification of existing noise levels

Land quality
• Google Maps/Earth
• Site walkover information
• Envirocheck Data Sheets provided as a GIS Database
• British Geological Survey (BGS) logs

Socio-economic and community
• Statistics from the Office of National Statistics 2001 Census data
• Ealing Community Network www.ealingnetwork.org.uk/index.php?nuc=eweb&id=34
Property

- Promap, Ordnance Survey and A-Z mapping
- Multimap/Google Earth aerial/satellite photographs
- Mouchel referencing
Appendix 2 – Site location plan
APPENDIX 2
SITE LOCATION PLAN
S04EG SITE

This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
Appendix 3 – Planning and environment plans
APPENDIX 3A
PLANNING & ENVIRONMENT PLAN
S04EG SITE

This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
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Appendix 4 – Photographs of the site and surroundings
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
View of the site from the south, looking north.

View of the site from the north, looking south.
View looking west from the east. Warple Way runs from right to left across the top of the photograph.

View looking north from the southern boundary of the Acton Storm Tanks site.
Appendix 5 – Transport plan
This is an indicative working draft plan which has been produced for the purpose of confidential discussions only. Accordingly, the draft plan must not be copied, distributed or shown to any third party without the express written permission of Thames Water Utilities Limited. It provides an indication of sites that, following discussions with local authorities and other stakeholders, may be confirmed as being on the shortlist of construction sites for the proposed Thames Tunnel. Inclusion of a site on this draft plan should not be taken to mean that such site will be selected as a construction site to form part of the Thames Tunnel scheme.
Appendix 6 – Services and geology plan
Appendix 7 – Construction phase layout
Appendix 8 – Operational phase layout
VENTILATION BUILDING (SHAFTS)

VENTILATION TOWER (SHAFTS)

DIAGRAMMATIC REPRESENTATION OF TOP STRUCTURE ABOVE MAIN AND INTERMEDIATE SHAFTS.

NOTE:
1. STRUCTURE TO BE PROTECTED BY REMOVABLE HANDRAILS IN THE TEMPORARY CASE.
2. POSITION OF COVERS ARE VARIABLE WITHIN 10m FROM THE EDGE OF THE STRUCTURE, AND THE LOCATION IS BASED ON SITE SPECIFIC REQUIREMENT.
3. CLADDING OF VENTILLATION BUILDING TO SUIT LOCATION AND AESTHETICS.
4. ALL TOP STRUCTURES TO HAVE:
   - ACCESS STAIRS/LADDER
   - TEMPORARY OR PERMANENT HAND RAILING
5. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
## Transport

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to road network</td>
<td>Construction site access located on Warple Way at private access known as Allied Way. Warple Way is one-way southbound and therefore the northern end of Warple Way would require conversion to two-way, and the traffic signal junction with The Vale amended to allow two-way flow on Warple Way. The access route from/to the TLRN (A40) would use Old Oak Road and The Vale (A4020). The access route would then use Warple Way to access the site via Allied Way. Warple Way between The Vale and the site is one-way southbound, is approximately 7.5 metres wide and features parking on both sides, reducing the effective width to 3.5m. To enable two-way access by HGVs, all on-street parking between The Vale and the site access on Warple Way will require removal. Acton Storm Tanks would be used for the storage of some materials. Warple Way between Cobbold Road and Canham Gardens would therefore need to be converted to two-way traffic. Access route via Warple Way 1.9km. Permanent access to the site is via a new access on Warple Way. Warple Way in this location is one-way, street lit and subject to a 30mph speed limit. A preliminary transport access plan is attached as Appendix 5.</td>
<td>Construction site access is located on Warple Way at Allied Way. Warple Way between the site access and The Vale would require conversion to two-way. All parking would need to be removed and amendments made to the traffic signal junction on The Vale.</td>
</tr>
<tr>
<td>Access to river</td>
<td>River access is not essential as excavated material will be transported to a main site by road.</td>
<td>River access is not essential as excavated material will be transported to a main site by road.</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
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</tr>
<tr>
<td>Access to rail</td>
<td>Use of rail is unlikely to be feasible due to the small quantities of excavated material produced. Route to rail access point at Barnes Bridge uses the route to The Vale, then continues west along The Vale to Gunnersby Lane (A4000) before joining the North Circular (A406). The route then uses the A4 and the A316. The route then follows a narrow, traffic-calmed (speed humps) road, requiring the removal of the speed humps for construction vehicle use. Creation of a siding by Barnes Bridge would require further investigation. Distance 9.4km to rail access point from the site.</td>
<td>Access from site to TLRN restricted, as discussed above. No restrictions on TLRN. Creation of a rail siding at Barnes Bridge is possible. However, further investigation is required.</td>
</tr>
<tr>
<td>Parking</td>
<td>Parking is potentially available on site. No parking available on Warple Way as some of the spaces will require removal to enable access, putting further demand on the remaining parking.</td>
<td>Limited parking available on site, no parking off site.</td>
</tr>
<tr>
<td>Public transport accessibility</td>
<td>PTAL 1-2 (low), as identified within Table 2.3.</td>
<td>PTAL least suitable. Public transport access issues for workforce. Workforce transport could be provided.</td>
</tr>
<tr>
<td>Traffic management</td>
<td>Site access via Allied Way, which appears to be a private road. All parking on Allied Way will require removal. To enable access, Warple Way will require conversion to two-way between the site access and The Vale. All parking between The Vale and site access will require removal, and the traffic signal junction with The Vale will require amendments to enable two-way access on Warple Way. Acton Storm Tanks would be used for the storage of some materials. Warple Way between Cobbold Road and Canham Gardens would therefore</td>
<td>Access via private road on Allied Way. Parking on Allied Way and Warple Way will require removal.</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
<td>---------------------</td>
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</tr>
</tbody>
</table>
|                     | need to be converted to two-way traffic.  
A preliminary transport management plan is attached as Appendix 5. | |

**Summary:** The site is considered suitable as a main tunnel reception site. Despite the access route being constrained, the site is only likely to generate a small amount of HGV movements. The use of rail may not be feasible due to the small quantities of excavated material produced by a reception site. Should the quantities be sufficient for rail transport, the potential for the construction of rail sidings at Barnes Bridge would require further investigation. In order to enable road access for construction vehicles, Warple Way will require conversion to two-way and on-street parking will need to be removed. In addition, amendments to the traffic signal junction would be required. There is limited potential for the workforce to access the site by public transport, although some onsite parking would potentially be available.
### Archaeology

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designations, including archaeological priority areas</td>
<td>No designations within the site boundary.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Summary of historical uses</td>
<td>The shaft site appears to have been undeveloped until the 1890s, although a single building (farm) was located approximately in the location of the proposed ventilation building. Immediately to the east of the shaft site runs a north–south oriented tree-lined ditch. In 1896, Larder Road was built to the west of the site and a row of four terraced houses with back gardens extending to the west were constructed. By 1910, a large building labelled ‘Motorcar repairing works and garage’ had been constructed to the southwest of the shaft site which appears to have been a yard at this time. The factory and the terraced housing remain unchanged (apart from a possible extension of the factory into the proposed area of the shaft site). The terraced housing still stands today but the factory has been replaced and the proposed shaft site is currently a car park.</td>
<td>A detailed desk-based assessment is required to sufficiently understand the archaeological resource and define risk to potential development.</td>
</tr>
<tr>
<td>Potential receptors of very high or high value with the potential to be directly affected</td>
<td>No archaeological receptors are recorded within the area of the site. This does not preclude the possibility of unrecorded archaeological receptors of high value being present.</td>
<td>A detailed desk-based assessment is required to sufficiently understand the archaeological resource and define risk to potential development.</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Comments</td>
<td>Mitigation required and conclusions</td>
</tr>
<tr>
<td>---------------------</td>
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<td>-----------------------------------</td>
</tr>
<tr>
<td>Potential receptors of medium value with the potential to be directly affected</td>
<td>No archaeological receptors are recorded within the area of the site. This does not preclude the possibility of unrecorded archaeological receptors of medium value being present within the site.</td>
<td>A detailed desk-based assessment is required to assess development impacts.</td>
</tr>
<tr>
<td>Other receptors with the potential to be directly affected</td>
<td>The dewatering of adjacent waterlogged deposits is unlikely to be an issue, given the location of the site some distance from the Thames.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Extent of existing disturbance (if known)</td>
<td>The construction of the existing sewage works and services is likely to have adversely impacted any in situ archaeological deposits.</td>
<td>A detailed desk-based assessment is required to sufficiently understand the archaeological resource and define risk to potential development.</td>
</tr>
</tbody>
</table>
| Potential issues | Detailed design proposals and an outline method statement will be required to enable initial assessment of development impacts, and to inform mitigation proposals. The currently available information indicates that due to previous disturbance within the site, the archaeological risk is low. However, further desk-based assessment is required to determine this. | Mitigation methods could include:  
- desk-based assessment  
- production of deposits model  
- archaeological monitoring of geotechnical investigations  
- archaeological evaluation  
- archaeological watching brief  
- archaeological excavation. |

**Summary:** On the basis of the information currently available, the site is suitable as a main tunnel reception site as the archaeological risk is likely to be low to medium. No records of archaeological receptors within the site have been identified at this stage, and the site has been subjected to disturbance by modern development. Available geotechnical information suggests that deeply stratified deposits and waterlogged deposits are unlikely to be present. Further desk-based assessment would be required to confirm the above, should this site be progressed.
### Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Designations including conservation areas, including trees</strong></td>
<td><strong>Listed buildings</strong>&lt;br&gt;There are no listed buildings within 250m of the site.</td>
<td>In the case of two conservation areas, a high-quality scheme design and/or adequate screening for the development will be required. A detailed desk-based assessment, in conjunction with archaeology work, may be required to inform likely development impact and to determine more detailed mitigation proposals.</td>
</tr>
<tr>
<td></td>
<td><strong>Locally listed buildings</strong>&lt;br&gt;Although the London Borough of Ealing maintains a list of locally listed buildings, this data was not available at the time of this assessment. There are no locally listed buildings within 250m of the site and within the borough of Ealing.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Conservation areas</strong>&lt;br&gt;Ravenscourt and Starch Green Conservation Area, 10m&lt;br&gt;Bedford Park Conservation Area, 146m</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Registered historic parks and gardens</strong>&lt;br&gt;There are no registered historic parks and gardens within 250m of the site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Locally listed parks and gardens</strong>&lt;br&gt;There are no locally listed parks and gardens within 250m of the site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Protected views</strong>&lt;br&gt;Information on protected views is not currently available for the boroughs of Hammersmith and Fulham, Hounslow or Ealing.</td>
<td></td>
</tr>
<tr>
<td><strong>Potential receptors of medium to very high importance with the potential to be directly affected</strong></td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
## Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other receptors of lesser importance with the potential to be <strong>directly</strong> affected</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Potential receptors of medium to very high importance with the potential to be <strong>indirectly</strong> affected</td>
<td>There is potential for two conservation areas to experience an indirect impact on their setting as a result of the development.</td>
<td>There is no visual relationship between the development site and the Bedford Park Conservation Area and, as such, no mitigation is required. There is potential for the setting of the Ravenscourt and Starch Green Conservation Area to be impacted by development. As such, adequate screening may be required to mitigate any negative visual impact on the area.</td>
</tr>
<tr>
<td>Other receptors of lesser importance with the potential to be <strong>indirectly</strong> affected</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Sensitive landscape character areas likely to be affected, including trees and TPOs</td>
<td>The site is located on part of the Acton Park Industrial Estate, consisting of a mix of low-rise industrial units and adjacent car parks. To the north and east are residential areas. The Acton Park Industrial Estate stretches to the south and west. The site has an existing retail warehouse character within an area of mixed-use industrial. The presence and operation of machinery, materials stores and buildings would result in temporary, adverse direct</td>
<td>Introduction of landscape scheme to include appropriate surface treatments and planting to relate to adjacent houses/gardens and street frontage. This site is suitable since its character is industrial in nature and although during construction the presence and operation of machinery, materials stores and buildings on site would impact the character of the site, permanent elements with suitable mitigation could be incorporated into the</td>
</tr>
</tbody>
</table>
## Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>impacts on the character of the site and temporary, adverse indirect impacts on neighbouring areas.</td>
<td>industrial estate and would have only a minimal impact.</td>
<td></td>
</tr>
<tr>
<td>Potential views likely to be affected</td>
<td>Open views into the site from neighbouring residential areas and other buildings on the industrial estate. The views are of an industrial/retail warehouse area with car parks.</td>
<td>During construction, use of hoardings and appropriate lighting would reduce visual intrusion. Design of permanent structures and appropriate mitigation, including planting, to be given careful consideration. The site is suitable if carefully designed. Introduction of planting to screen permanent structures from residential areas could enhance existing views.</td>
</tr>
<tr>
<td>Particular considerations on sites where new permanent structures are required</td>
<td>The indirect impact of permanent structures on the Bedford Park and Ravenscourt and Starch Green conservation areas will need to be carefully considered.</td>
<td>The structures should be of a high-quality design to ensure they do not detract from the character or appearance of the adjacent conservation areas, their setting, or views to and from them.</td>
</tr>
<tr>
<td>Potential issues</td>
<td>There are two built heritage receptors within 250 metres of the development site. The Ravenscourt and Starch Green Conservation Area may experience an indirect impact from the scheme. There is potential to mitigate any adverse impacts through screening and/or a high-quality scheme design.</td>
<td>Owing to the existing screening, it is unlikely that the Bedford Park Conservation Area will experience a significant impact on its setting. However, in the case of the Ravenscourt and Starch Green Conservation Area, there may be an indirect impact, in which case, adequate screening will be required to mitigate any negative impact on the setting of the area,</td>
</tr>
</tbody>
</table>
### Built heritage and townscape

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
</table>

**Summary:** This site is considered suitable as a main tunnel reception site as the impact on built heritage receptors is likely to be minimal, and the industrial nature of the site means that it is judged to be of relatively low sensitivity. There are two receptors of medium importance (Bedford Park and Ravenscourt and Starch Green conservation areas) that may potentially be indirectly impacted on. Mitigation in the form of a high-quality scheme design, landscape design and screening would reduce any adverse impacts arising from the scheme.

In terms of townscape impacts, the site is considered to be suitable as a main tunnel reception site. The existing character is industrial in nature. During construction, the presence and operation of machinery, materials stores and buildings on site would impact the character of the site and local views. However, careful design of permanent elements and introduction of appropriate landscape treatment would reduce potential impact and could enhance the existing character and views.
## Water resources – hydrogeology and surface water

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hydrogeological conditions (groundwater)</strong>&lt;br&gt;From BGS Geological Model, giving average ground condition profile. Local near surface conditions may vary, particularly within the river.</td>
<td><strong>Geology (thickness)</strong>&lt;br&gt;• Superficial geology and made ground (2m)&lt;br&gt;• London Clay (44m)&lt;br&gt;• Lambeth Group (15m)&lt;br&gt;• Thanet Sand (9m)</td>
<td>The main tunnel reception shaft would be constructed to an invert level of approximately 25.8mbgl and therefore the shaft will be founded in the London Clay. Piezometric head(^{(1)}) in the Chalk is approximately 8.2m below the base of the construction. Therefore, there is no potential issue in terms of geotechnical design.</td>
</tr>
<tr>
<td><strong>Hydrogeology</strong>&lt;br&gt;• Piezometric level in Chalk aquifer: ~ -32mAOD (~ 34mbgl) from EA Jan 08 water level contouring.</td>
<td><strong>Groundwater monitoring location</strong>&lt;br&gt;• EA hydrometry sites: No hydrometry site nearby.</td>
<td></td>
</tr>
<tr>
<td><strong>SPZs and groundwater users</strong></td>
<td><strong>SPZ</strong>&lt;br&gt;• Not located in a source protection zone defined by EA</td>
<td>A simple volumetric approach has been used to calculate the total capture zone of the abstraction borehole. A conservative mean annual recharge of 100mm/year was used to calculate a radius for licensed abstraction boreholes as follows: 1. 225m 2. 103m As a result, the shaft will not be located within either of these catchment areas.</td>
</tr>
<tr>
<td><strong>EA licensed groundwater abstractions and details</strong>&lt;br&gt;• No public water supply&lt;br&gt;• Five licensed abstraction borehole within 2km radius.</td>
<td>Licence numbers:&lt;br&gt;1. 28/39/39/0230 (3 boreholes)&lt;br&gt;2. 28/39/39/0197 (2 boreholes)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Locations:&lt;br&gt;1. 950m northeast of the site&lt;br&gt;2. 1.9 km southwest of the site</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operator:&lt;br&gt;1. London &amp; Quadrant Housing Trust&lt;br&gt;2. Chiswick Park Estate</td>
<td></td>
</tr>
</tbody>
</table>
## Water resources – hydrogeology and surface water

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Ltd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstracted aquifer unit:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.  Chalk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.  Gravel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstraction purposes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.  Industrial, commercial and public service (non-evaporative cooling, drinking, cooking, sanitary, washing)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.  Industrial, commercial and public service (business park – spray irrigation, make-up or top-up water)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstraction quantity (annual):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.  63,500m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.  13,325m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Local authorities (LA) unlicensed groundwater abstractions and details**
- No abstraction borehole within 1 km radius.

**Ground source heat pump scheme**
- One planning application for GSHP to 300m south of the site within 1 km radius.

<table>
<thead>
<tr>
<th>Borehole locations and depths</th>
<th>There are no borehole records of historical water wells within 1km radius.</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential impacts on surface water features</td>
<td>The site is located approximately 1.8km away from the Thames. There are roads and buildings between the site and the river so there is no direct overland pathway to the Thames.</td>
<td>Work needs to be undertaken in consideration of Pollution Prevention Guidelines – PPG1, PPG5 and PPS23.</td>
</tr>
</tbody>
</table>
## Water resources – hydrogeology and surface water

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential impacts on groundwater (resources and quality)</td>
<td>No impact on groundwater at depth is likely since the shaft is to be constructed in London Clay (unproductive strata). At shallow depth, the shaft is located in Langley Silt, which is classified as unproductive strata, so no impact is expected.</td>
<td>See below (likely types of mitigation measures that will be required).</td>
</tr>
<tr>
<td>Likely types of mitigation measures that will be required</td>
<td>No mitigation required if groundwater is not impacted.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Potential issues</td>
<td>No further issues</td>
<td>No mitigation required</td>
</tr>
</tbody>
</table>

**Summary:** In terms of hydrogeology, this site is considered suitable as a main tunnel reception site because the shaft is to be constructed in London Clay (unproductive strata). No impact on the Chalk aquifer is expected. The superficial deposits at the site are Langley Silt, which is classified as unproductive strata at the site. Therefore, no impact is expected at shallow depth.

In terms of surface water resources, this site is considered suitable as a main tunnel reception site because there is no direct pathway for pollution to the River Thames. However, standard mitigation would be required.
## Ecology (terrestrial and aquatic)

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statutory designations</td>
<td>There are two local nature reserves (LNRs) within 2km of the site. These are: Wormwood Scrubs located 1.9km northwest at OS grid reference TQ 221 813. Gunnersbury Triangle located 1.75km southwest at OS grid reference TQ 201 786.</td>
<td>None required</td>
</tr>
<tr>
<td>Non-statutory designated wildlife sites</td>
<td>There are two sites of importance for nature conservation within close proximity to the site. These are Southfields Recreation Ground Nature Area and Acton Park Nature Conservation Area. These are located within 0.5km of the site.</td>
<td>None required</td>
</tr>
<tr>
<td>BAP priority habitats</td>
<td>There are no London BAP habitats within the site. Build structures comes under other important habitats.</td>
<td>Not likely to require mitigation unless the structures on site support protected species. The London BAP recommends that new structures incorporate species-friendly features into their design as buildings can be used as important habitat for some protected species.</td>
</tr>
<tr>
<td>Protected or otherwise notable species within the study area</td>
<td>Site may have potential to support breeding birds and roosting bats. However, due to the limited amount of vegetative habitat present, breeding bird issues are likely to be limited. No direct impact on aquatic receptors.</td>
<td>If bat roosts were found to be present, mitigation would be required for any buildings to be affected by works, possibly including offsite provision. Careful placement of lighting to minimise illumination of surrounding habitat is likely to be required.</td>
</tr>
<tr>
<td>Potential issues</td>
<td>No other issues</td>
<td>No other issues</td>
</tr>
</tbody>
</table>

**Summary:** This site is suitable as a main tunnel reception site and may require only basic ecological surveys if selected. Should notable or protected species be present, it is likely that some limited habitat mitigation or compensation would be required.
### Flood risk assessment

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood risk zone</td>
<td>Flood Zone 1 (greater than one in 1,000-year flood extent). Sewage transmission infrastructure is considered to be water compatible according to Table D.2 of PPS25.</td>
<td>An FRA would be required to assess the residual risk of flooding to the site.</td>
</tr>
<tr>
<td>Assessment of conditions for SUDS</td>
<td>There is space on site for SUDS. However, existing buildings on site may cause issues with the use of SUDS. The superficial geology on site is silty clay and, as such, further investigation is required to assess the suitability for infiltration SUDS.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Potential issues</td>
<td>No other issues.</td>
<td>No other issues.</td>
</tr>
</tbody>
</table>

**Summary:** This site is suitable as a main tunnel reception site because although there may be constraints on SUDS due to space and suitability for infiltration, the site lies in Flood Zone 1 (greater than one in 1,000-year flood extent).
<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQMA</td>
<td>The air quality objective for NO₂ is exceeded on major roads in the vicinity of the site.</td>
<td>There is a need for more site specific data.</td>
</tr>
<tr>
<td>Sensitive receptors</td>
<td>There are residential properties along the access route to/from the TLRN (A40) along Old Oak Road and The Vale (A4020). There are also residential properties on Warple Way. There are residential properties within 50m of the proposed site on Essex Park Mews, Larden Road, and The Vale.</td>
<td>There are relevant air quality sensitive receptors present along the route construction traffic is likely to take and close to the proposed construction works.</td>
</tr>
<tr>
<td>Existing traffic issues</td>
<td>The main traffic issue in this area is exhaust emissions from vehicles along the A40 and A4020 corridors.</td>
<td>Additional vehicle emissions have a low potential to interfere with local air quality action plan policies.</td>
</tr>
<tr>
<td>Existing sources of significant air pollutants</td>
<td>See above</td>
<td>See above</td>
</tr>
<tr>
<td>Notable gaps in existing air quality monitoring</td>
<td>There is no data available at the likely access to A40 and the nearest existing data indicates existing AQLV exceeded.</td>
<td>Collect a minimum of six months’ diffusion tube data at site access to the A40 or other point of access to major road network.</td>
</tr>
<tr>
<td>Potential issues</td>
<td>The risk from additional exhaust emissions from construction HGVs is undefined at present. The risk from dust impacts is moderate.</td>
<td>Minimise HGV movements on the local road network during the peak hour. Standard dust control measures will minimise the effect of fugitive dust on nearby sensitive receptors.</td>
</tr>
</tbody>
</table>

**Summary:** The site is less suitable for use as a main tunnel reception site due to the potential for fugitive emissions of dust during construction to have a perceptible impact at residential properties in close proximity to the site. These impacts could be minimised with standard dust control measures. There is potential for HGV movements on the local road network to cause localised air quality impacts in areas of already poor air quality. This could, to some extent, be mitigated by minimising the movement of HGVs during peak hours.
<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise band level (from Defra noise maps)</td>
<td>Information from Defra noise maps indicates daytime noise levels of less than 58dB $L_{Aeq}$ and night-time noise levels of less than 50dB $L_{Aeq}$ at the rear facades of residential properties on The Vale, located to the north, Larden Road located to the east and Valetta Road located to the south. Noise levels from the Defra noise maps provide an indication of prevailing noise levels only, and will not be employed in any detailed assessments for chosen sites.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Sensitive receptors</td>
<td>Sensitive receptors located on The Vale to the northeast consist of four-storey buildings, with retail on the ground floor and residential dwellings above. These are located approximately 5m from the site boundary and 25m from the shaft location. Sensitive receptors to the east, on Larden Road, consist of three-storey residential dwellings. These are located approximately 20m from the site boundary and 20m from the shaft location. Sensitive receptors to the south, on Valetta Road, consist of two-storey residential properties. These are located approximately 105m from the site boundary and 105m from the shaft location. The proposed access route to the site is for vehicles to enter and exit the site from The Vale, down Warple Way. This route contains a number of noise-sensitive properties along The Vale, and these receptors may be considerably affected by HGV traffic.</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
## Noise

<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing traffic issues</td>
<td>Local road traffic, coupled with more distant road traffic on the A4020 to the north, will contribute to the local noise climate in the area.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Existing sources of significant noise emissions</td>
<td>Local road traffic, coupled with more distant road traffic on the A4020 to the north, will contribute to the local noise climate in the area.</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
| Potential issues                     | **Construction:**  
The construction period is estimated at six to seven years and working hours will be 12 hours a day (7am – 7pm), Monday to Saturday. This has the potential to result in adverse noise impacts on the sensitive receptors surrounding the site, in particular The Vale, Larden Road and Valetta Road.  
A relatively high number of daily HGV movements are anticipated, and this has the potential to result in adverse noise impacts to noise-sensitive properties located along the haul route.  
The site is relatively large and, while the shaft location may be fixed, ancillary plant should be sited as far as is practicable from surrounding sensitive receptors.  
Proposed 3m site boundary fencing will provide useful noise mitigation to some plant and construction activities.  
Vibration resulting from general construction works is not anticipated to result in an adverse impact. The nearest receptors to the proposed shaft location are at a distance of approximately 20m and it is unlikely that vibration levels from shaft sinking will give rise to cosmetic building damage. However, vibration levels may cause annoyance. Vibration from tunnelling should be considered on a case-by-case basis at particular | Adherence to the good site practices provided in BS5228.  
Siting of noisy equipment and construction activities as far as is practicable from sensitive receptors.  
Provision of site boundary noise fences. |
<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Comments</th>
<th>Mitigation required and conclusions</th>
</tr>
</thead>
</table>
| sensitive locations | **Operation:**  
With appropriate attenuation (if necessary), there is no reason why noise from the ventilation column and top chamber should result in adverse noise impacts to nearby sensitive receptors. | |

**Summary:** This site is less suitable as a main tunnel reception site due to the close proximity of residential receptors to the site. The number of vehicles associated with the construction phase and their access into and out of the site (and close to residential areas) also has the potential to cause disturbance.
<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Land quality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site location</strong></td>
<td><strong>Grid reference:</strong> 521251, 179962</td>
</tr>
<tr>
<td><strong>Current site use</strong></td>
<td>The site is currently occupied by Allied Industrial Estate. Warehouses cover the majority of the site, Allied Road runs west to east across the site and a car park covers the proposed shaft position.</td>
</tr>
<tr>
<td><strong>Topography</strong></td>
<td>No site visit has been undertaken by a land quality specialist at this stage.</td>
</tr>
<tr>
<td><strong>Field evidence of contamination (ie, visual/olfactory)</strong></td>
<td>No site visit has been undertaken by a land quality specialist at this stage.</td>
</tr>
</tbody>
</table>
| **Current surrounding land use (immediately adjacent to site)** | Aerial images show:  
North: Residential housing/retail  
East: Residential housing  
South: Residential housing  
West: Warehouses  |
| **Geological and hydrogeological information**  |                                                                                                                                                                                          |
| **Geological strata**                           | • Superficial geology and made ground (2m)  
• London Clay (44m)  
• Lambeth Group (15m)  
• Thanet Sand (9m)  |
| **Underlying aquifer classes**                  | **Unproductive strata:** London Clay  
**Secondary aquifer:** River terrace deposits, Lambeth Group, Thanet Sand  
**Principal aquifer:** Chalk  |
| **Groundwater vulnerability/Soil classification (High/Intermediate/Low/Not applicable)** | River terrace deposits – minor aquifer  
High leaching potential of soils (U)²  |
<p>| <strong>Source protection zone details</strong>              | Not located in a source protection zone defined by EA                                                                                                                                 |
| <strong>Surface water receptor</strong>                      | None                                                                                                                                                                                      |</p>
<table>
<thead>
<tr>
<th>Site considerations</th>
<th>Land quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant information within a 250m radius of the site</td>
<td>On site</td>
</tr>
<tr>
<td>Historical potentially contaminating activities (based on mapping data)</td>
<td>• Undeveloped land, 1862 –1898</td>
</tr>
<tr>
<td></td>
<td>• Motor car repairing works and garage, 1909-1947</td>
</tr>
<tr>
<td></td>
<td>• Carriage factory (northeast region), 1909-1947</td>
</tr>
<tr>
<td></td>
<td>• Automobile body and pressed steel works, 1947-1972</td>
</tr>
<tr>
<td></td>
<td>• Store (northeast region), 1947-1972</td>
</tr>
<tr>
<td></td>
<td>• Allied Industrial Estate 1976-1996</td>
</tr>
<tr>
<td>Off site</td>
<td>• Motor car repairing works and garage (adjacent west), 1909-1947</td>
</tr>
<tr>
<td></td>
<td>• Warehouses (adjacent west), present</td>
</tr>
<tr>
<td></td>
<td>• Soap works (55m west), 1932-1972</td>
</tr>
<tr>
<td></td>
<td>• Printing works (62m northwest), 1947-1972</td>
</tr>
<tr>
<td></td>
<td>• Works – use not specified (66m southwest), 1972-1996</td>
</tr>
<tr>
<td></td>
<td>• Chemical works (67m northwest), 1947-1972</td>
</tr>
<tr>
<td></td>
<td>• Engineering works (72m west), 1932-1947</td>
</tr>
<tr>
<td></td>
<td>• Electrical engineering works (75m south), 1947-1972</td>
</tr>
<tr>
<td></td>
<td>• Corrugated paper works (75m southeast), 1909-1920</td>
</tr>
<tr>
<td></td>
<td>• Engineering works (85m southwest), 1909-1920</td>
</tr>
<tr>
<td></td>
<td>• Sewage disposal works/pumping station (110m southwest), 1896 - present</td>
</tr>
<tr>
<td></td>
<td>• Acton Park Industrial Estate, (115m west), 1996</td>
</tr>
<tr>
<td></td>
<td>• Electrical substation (120m northwest), 1947-1972</td>
</tr>
<tr>
<td></td>
<td>• Works – use not specified (120m west), 1972-1977</td>
</tr>
<tr>
<td></td>
<td>• Motor car engineering works (126m west), 1909-1934</td>
</tr>
<tr>
<td></td>
<td>• Depot (135m south-east), 1947-1972</td>
</tr>
<tr>
<td>Pollution incidents to controlled waters</td>
<td>None</td>
</tr>
<tr>
<td>Landfill sites</td>
<td>None</td>
</tr>
<tr>
<td>Other waste sites</td>
<td>None</td>
</tr>
<tr>
<td>Registered radioactive substances</td>
<td>None</td>
</tr>
<tr>
<td>Fuel stations/depots</td>
<td>None</td>
</tr>
</tbody>
</table>
### Site considerations

<table>
<thead>
<tr>
<th>Land quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sixteen</td>
</tr>
<tr>
<td>• Textile manufacturers, active (10m north)</td>
</tr>
<tr>
<td>• Garage services, active (17m north)</td>
</tr>
<tr>
<td>• Clocks and watches – manufacturers and wholesale, inactive (17m north)</td>
</tr>
<tr>
<td>• Printers, active (20m west)</td>
</tr>
<tr>
<td>• Toiletries, inactive (21m west)</td>
</tr>
<tr>
<td>• Dry cleaners, active (27m north)</td>
</tr>
<tr>
<td>• Wire products – manufacturers, inactive (28m north)</td>
</tr>
<tr>
<td>• Metal works, active (28m north)</td>
</tr>
<tr>
<td>• Cookers – sales and services, active (30m north)</td>
</tr>
<tr>
<td>• Manufacturers, active (30m west)</td>
</tr>
<tr>
<td>• Printers, active (30m west)</td>
</tr>
<tr>
<td>• Scientific apparatus and instrument manufacture, inactive (30m west)</td>
</tr>
<tr>
<td>• Electronic components manufacture and distribution, active (30m west)</td>
</tr>
<tr>
<td>• Mobile phone accessories, inactive (30m west)</td>
</tr>
<tr>
<td>• Clocks and watches – manufacture and wholesale (30m west)</td>
</tr>
<tr>
<td>• Furniture manufacturers, inactive (34m west)</td>
</tr>
</tbody>
</table>

### Site classification based on above information

<table>
<thead>
<tr>
<th>Activity</th>
<th>Distance and direction to site</th>
<th>Contaminants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential site contaminants derived from surface sources (eg, contaminants in made ground)</td>
<td>1) Some potential for made ground from potential filling operations during development</td>
<td>1) Metals, PAHs, TPH</td>
</tr>
<tr>
<td>2) Motor car works and garage</td>
<td>2) On site and adjacent west to site</td>
<td>2) Metals, TPH, PAHs</td>
</tr>
<tr>
<td>3) Automobile body and pressed steel works</td>
<td>3) On site</td>
<td>3) Metals, TPH, PAHs</td>
</tr>
<tr>
<td>4) Industrial estate</td>
<td>4) On site</td>
<td>4) Metals, TPH, PAHs</td>
</tr>
<tr>
<td>Site considerations</td>
<td>Land quality</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td><strong>Potential site contaminants derived from offsite sources and transported to site</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Warehouses</td>
<td>1) Adjacent west</td>
<td></td>
</tr>
<tr>
<td>2) Garage services</td>
<td>2) 17m north</td>
<td></td>
</tr>
<tr>
<td>3) Printers</td>
<td>3) 20m west</td>
<td></td>
</tr>
<tr>
<td>4) Dry cleaners</td>
<td>4) 27m north</td>
<td></td>
</tr>
<tr>
<td>1) Metals, TPH, PAHs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Metals, TPH, PAHs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Metals, TPH, PAHs, solvents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Perchloroethylene (PCE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Potential contamination pathways to site (Conceptual Site Model)</strong></td>
<td><strong>Source 1</strong>: A1, A2, A3, B4  <strong>Source 2</strong>: E1, F7</td>
<td></td>
</tr>
<tr>
<td><strong>Contamination category</strong></td>
<td>Category 3 – assessed as high risk</td>
<td></td>
</tr>
</tbody>
</table>

**Summary:** The site is less suitable as a main tunnel reception site based on the high potential for contamination to have occurred from the onsite car works, garage, pressed steel works and industrial estate, and from offsite activities to have impacted shallow groundwater which may have migrated beneath the site. The identified sources of contamination may impact on site workers and adjacent human receptors through direct contact/vapour inhalation exposure pathways.

**Notes:**
1. From BGS Geological Model, giving average ground condition profile. Local near surface conditions may vary, particularly within the river.

2. Soil information for urban areas is based on fewer observations than elsewhere in the country. Therefore, a worst case vulnerability (H) is assumed until proven otherwise.

3. Refer to schematic Conceptual Site Model for explanation of site-specific source-pathway-receptors.
Contacts

For information about the Thames Tideway Tunnel

Call: **0800 0721 086** Lines are open 24 hours a day
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For our language interpretation service call **0800 0721 086**

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For information about acceptance of our application and the examination process please contact the Planning Inspectorate.

Call: **0303 444 5000**
Visit: [http://infrastructure.planningportal.gov.uk](http://infrastructure.planningportal.gov.uk)